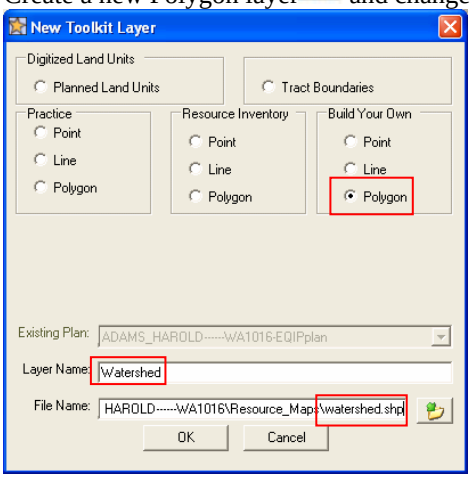
Estimating Slope for Small Watershed

Creating Watershed Layer

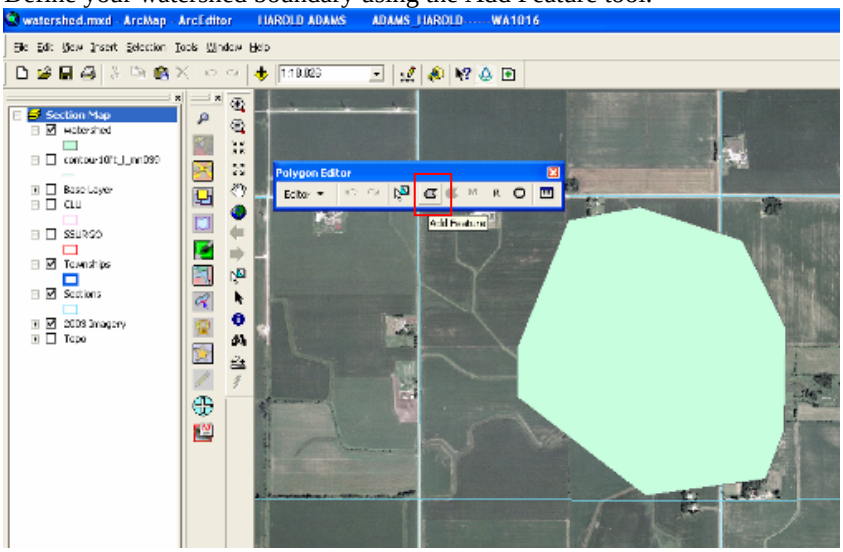
Open the ToolkitGIS_Template in the Customer folder.

Load A Consplan if present. *A Consplan is not necessary for this operation.*

Create a new Polygon layer and change the Layer Name AND File Name to watershed.



Define your watershed boundary using the Add Feature tool.

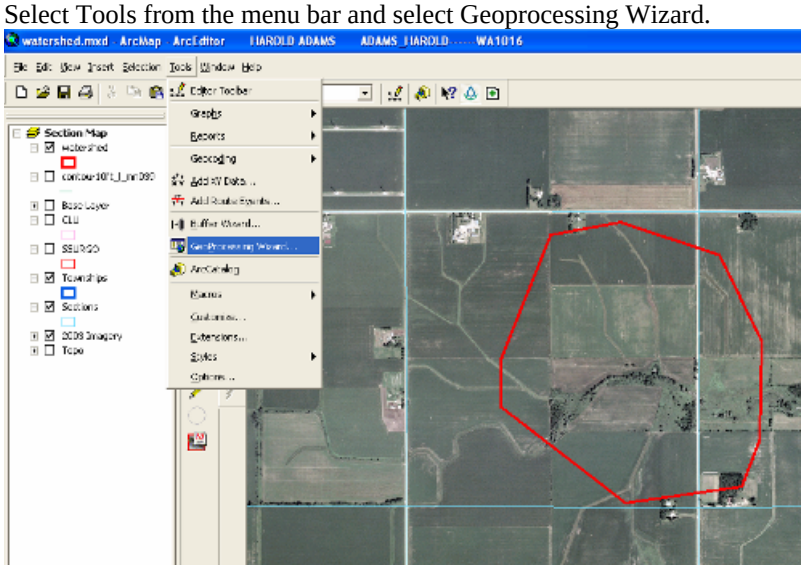


When you have finished defining your watershed, Stop editing and save your edits.

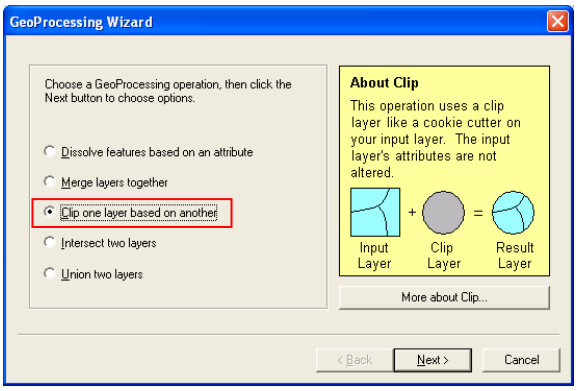
Add the contour layer to your project using . The contour layer (contour20ft_l_mn000.shp) should be in C:\geodata\elevation\.

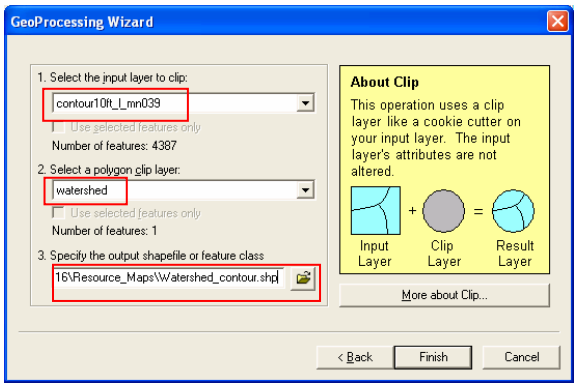
> *Note if you do not have the contour layer in the C:\geodata\elevation folder, copy it from F:\geodata\elevation\ before proceeding.*

Select Tools from the menu bar and select Geoprocessing Wizard.



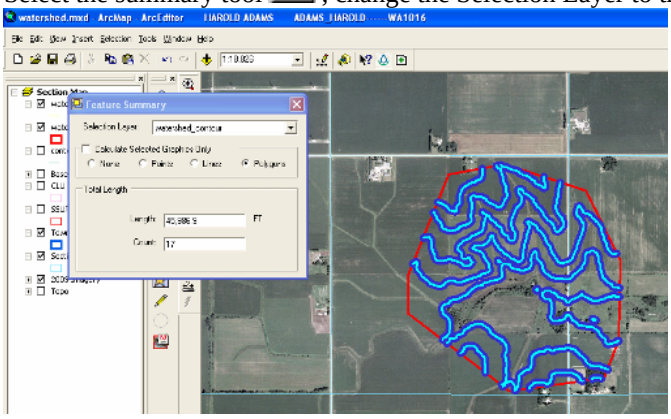
You will CLIP the contour lines with your watershed boundary. Browse to save the watershed contour lines in the *Resource_Maps* folder.



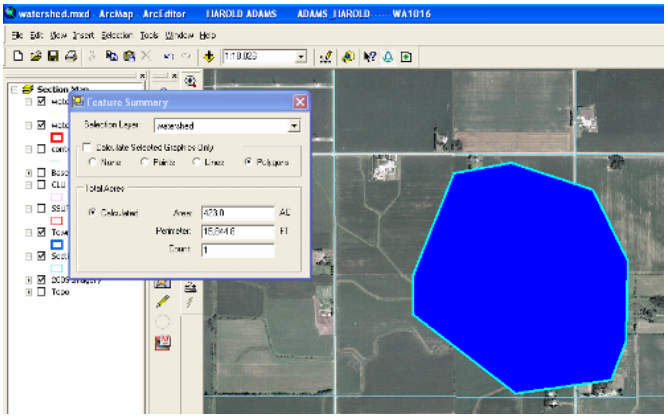


Click Finish to process. Your watershed_contour will be added to your project.

Select the summary tool  , change the Selection Layer to the *watershed_contour* layer.



Select  all the lines in your *watershed_contour* layer to get total length of the contour lines (write the number down). Change the Selection layer to the *Watershed* to get total Acres of the watershed.



Estimate Slope using the Formula below:

$$\frac{(\text{length of contour lines, ft})(\text{contour interval*, ft})(100)}{(\text{watershed area , acres})(43560)}$$

*(contour interval): Depending on the contour shapefile you used this can be either 10ft or 20ft